Specifications

REMOTE SENSING AND IMAGING SERVICES

For

WEST TENNESSEE RIVER BASIN AUTHORITY

2021

1.0 GENERAL CONDITIONS

The West Tennessee River Basin Authority (WTRBA) is responsible for maintaining the flow and function of west Tennessee rivers and streams and restoring, where practicable, the natural flow and function. To effectuate this work the WTRBA needs reliable data over large areas for modeling, design, and documentation of conditions for restoration projects. The most efficient resource to collect the needed elevation and imagery has been through remote sensing. Therefore, the WTRBA is requesting proposals for collection, processing, and delivery of LIDAR and Orthoimagry on five future project locations as well as a unit price for similar services on additional project areas that may arise due to emergency or increase in available funding.

2.0 PRODUCTS

2.1 LIDAR: Contractor will acquire Lidar at 0.7 meter post spacing (2 pts/ square meter) during leaf-off conditions meeting QL2 Lidar Accuracy Standards. The Lidar and ground control will be captured to support the Lidar Processing. All Lidar will be acquired utilizing approved sensor. Contractor will produce a Bare Earth DEM, Classified Point Cloud and .LAS files as final deliverables.

2.2 ORTHOIMAGERY: Contractor will acquire 3 band imagery of the survey areas to produce 6-inch GSD orthophotos.

2.3 FORMAT: For sites that require both Lidar and Ortho-imagery the data should be collected concurrently if possible. This approach will provide WTRBA with the following deliverables based on NAD83, TN State Plane projection, Units: U.S. Survey Feet. The Vertical Datum will be in NAVD88 with units in U.S. Survey Feet:

1) 0.7 meter post spacing Lidar
2) 6-inch GSD 3 band orthoimagery in GeoTIFF format
3) Classified Lidar Point Cloud (all returns) point cloud) in LAS 1.4 format
4) One set of 8-bit gray scale intensity images in GeoTIFF format
5) Hydrologic breaklines compiled as part of the hydro-flattening process as an ESRI shp file deliverable.
6) One set of one meter raster DEMs of the bare earth surface model in ESRI ArcGRID format
7) Ground Control report
8) FGDC Compliant Metadata file for the project.

2.4 ELECTRONIC FILES: Contractor will deliver final files on a solid state drive to the WTRBA Director and delivery will be considered complete after written confirmation of acceptance by the WTRBA.

2.5 PROJECT LOCATIONS: Approximate boundaries for each area below are included as images for reference and are also available electronically upon request.

1) **Running Reelfoot Bayou**: 19.3 Square Miles. Drainage canal along a 20-mile corridor. Lake and Dyer County
2) **Big Muddy Creek**: 4.1 Square Miles. Haywood County
3) **Middle Fork Bottoms**: 2.5 Square Miles. Madison County
4) **Cub Creek**: 1.70 Square Miles. Hardeman County
5) **Crooked Creek**: 4.3 Square Miles. Carroll County

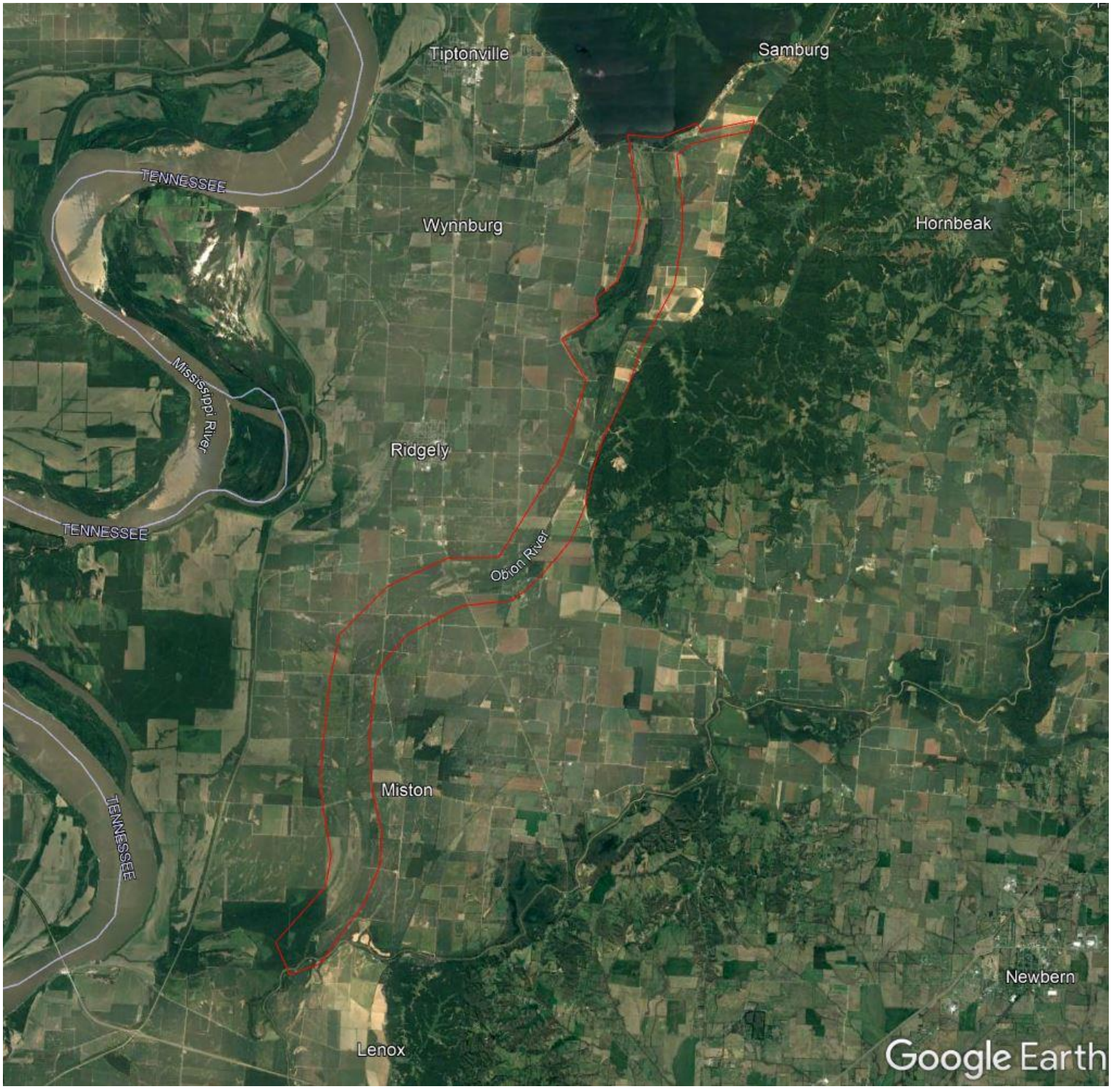
3.0 BID SCHEDULE

Item Number	Item	Description	Quantity	Unit
1	Mobilization of Remote Sensing Equipment	Planning, coordination, and collection of remotely sensed LIDAR and Orthoimagery data for each defined project location. Measurement and payment to be made as one lump sum for each separate project area.	10	Each
2	Remotely Sensed Imagery and Point Cloud Data	Aerial survey of project areas and delivery of LIDAR and Orthoimagery in the format and resolution outlined in Specifications. Measurement and payment to be made by square mile of coverage area, rounded to the nearest square mile.	50	Square Mile

4.0 DELIVERY

Data collection shall be completed during the winter and early spring at a time when leaves are off deciduous trees and in periods of relative-dry hydraulic conditions, unless otherwise requested by the WTRBA. Notice of collection schedule for a site should be provided to the WTRBA at least seven (7) days prior to completion to ensure no local factors will affect the data quality. Contractor shall deliver completed electronic files as soon as they are available but not exceeding 120 days.

Appendix A – Project Locations



RUNNING REELFOOT BAYOU

BIG MUDDY CREEK

MIDDLE FORK BOTTOMS

CUB CREEK

CROOKED CREEK RESTORATION